rate of this approach. Transpubic surgical operation provides excellent exposure with minimal morbidity and offers a direct approach to membranous urethral strictures.

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Urinary Lysosomal Enzymes for Early Detection of Renal Allograft Rejection

THE RELEASE of lysosomal enzymes into the urine, the result of cellular damage caused by rejection of a renal allograft is a valuable sign of early rejection.

Patients who received renal allotransplants have been monitored to compare the sensitivity of urine levels of β-galactosidase and N-acetyl-β-glucosaminidase. Using conventional clinical and laboratory measurements to detect impending rejection, a rapid (60 minute), simple, accurate, fluorometric assay was used to measure activity of both enzymes. Eighty percent of 32 rejection episodes were accompanied by a two-to-six-fold increase in enzyme release. Increases in serum creatinine and decreasing urine volumes occurred in 26 rejection episodes. In 12 episodes, elevated urinary enzyme levels were observed as early as four days before clinical evidence of rejection.

Rejection episodes, modified by high-dose administration of corticosteroids, were mirrored by a corresponding decrease in enzymatic activity.

It is postulated that urinary lysosomal enzyme measurements by fluorometric assays are valuable indicators of acute renal rejection, particularly when the diagnosis is not clearly established by conventional criteria. The accuracy of this rapid test makes it particularly appealing in the evaluation of renal allotransplantation rejection episodes.

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Complications of Urinary Undiversion

COMPLICATIONS of urinary undiversion may be divided between those related to patient selection and those pertaining to the operation. A detailed understanding of the anatomic and physiologic alterations in the dynamics of urine transport is an essential prerequisite for the selection of suitable candidates. The diverted urinary system, which is intended primarily for conduit function, is substantially changed to include reservoir function and must, therefore, be amended to provide efficient urine transport, an antireflux mechanism, adequate capacity, continence and complete emptying. In addition, the reconstructed system must be able to handle the mucus generated by the interposition of an intestinal segment. The implications of these hydrodynamic alterations, particularly in a patient with compromised renal function, may be profound.

The potential life-threatening hazards of urinary reconstruction demand rigid assessment of potential candidates and satisfactory demonstration of functional ability and stability of renal function by the singular measures of excretory urography and serum creatinine studies. The lower tract must be carefully evaluated and those factors that originally necessitated supravesical diversion must be recalled and carefully reassessed. Contraindications to undiversion include patients with continued renal deterioration or with creatinine clearance less than 40 ml per minute. Neurogenic bladder represents a relative contraindication.

When the proper operation is done correctly in a carefully chosen patient, the end result can be encouraging. Because of the precarious and delicate renal and metabolic balance involved, both the patient and the surgeon must recognize that the operation may either succeed brilliantly or fail dismally. The application of strict guidelines for patient selection and meticulous attention to intraoperative detail should help to tip the balance toward success.

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